Akustika. Mehhanismide ja seadmete müra. Helirõhutaseme määramine töö- ja muudes piiritletud kohtades helivõimsustaseme alusel

Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 11203:1999 sisaldab Euroopa standardi EN ISO 11203:1995 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 11203:1999 consists of the English text of the European standard EN ISO 11203:1995. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: Standard määrab kindlaks kaks meetodit mehhanismide ja seadmete poolt tekitatava helirõhu taseme määramiseks töökohas ja selle piiritletud ümbruses helivõimsustaseme järgi arvutades.	**Scope:**

ICS 17.140.20

Võtmesõnad: akustika, akustilised katsed, akustilised mõõtmised, helirõhk, katsed, kindlaksmääramine, mehhanismid, mootorimüra, müra (heli), seadmed, töökohad, õhuheli

EUROPEAN STANDARD
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Descriptors: Noise measurement, sound pressure level, machinery.

English version

Acoustics

Noise emitted by machinery and equipment

Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level

(ISO 11203:1995)

Acoustique; bruit émis par les machines et équipements; détermination des niveaux de pression acoustique d'émission au poste de travail et en d'autres positions spécifiées à partir du niveau de puissance acoustique (ISO 11203:1995)

Akustik; Geräuschabstrahlung von Maschinen und Geräten; Bestimmung von Emissionsschalldruckpegeln am Arbeitsplatz und an anderen festgelegten Orten aus dem Schalleistungspegel (ISO 11203:1995)

This European Standard was approved by CEN on 1995-11-21 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

International Standard

ISO 11203:1995 Acoustics; noise emitted by machinery and equipment; determination of emission sound pressure levels at a work station and at other specified positions from the sound power level,

which was prepared by ISO/TC 43 'Acoustics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 211 'Acoustics' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 11203:1995 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

Introduction

0.1 This International Standard specifies methods for determining the emission sound pressure levels at a work station and at other specified positions in the vicinity of machinery and equipment from the sound power level. In general, these sound pressure levels are different from those that would be observed when the machinery or equipment is operating in its normal surroundings where the environment may influence the emission sound pressure level.

0.2 This International Standard is one of a series (ISO 11200 to ISO 11204) which specifies various methods for determining the noise emissions of a piece of machinery or equipment, or a sub-assembly of such equipment (machine under test). ISO 11200 gives guidance on the choice of the method to be used to determine the emission sound pressure levels of machinery and equipment.

It also gives details of International Standards giving methods for the determination of sound power levels.

1 Scope

1.1 General

This International Standard specifies two methods for determining the emission sound pressure levels of machinery and equipment, at a work station and at other specified positions nearby, by calculation from the sound power level. The principal purpose of this determination is to permit comparison of the performance of different units of a given family of machinery or equipment, under defined environmental conditions and standardized mounting and operating conditions. The data obtained may also be used for the declaration and verification of emission sound pressure levels as specified in ISO 4871.

Emission sound pressure levels are determined with the same frequency weighting and time weighting, or in the same frequency bands, as those for which sound power levels have been determined.

NOTES

1 The contents of this and related International Standards are summarized in table 1 of ISO 11200:1995.

2 At any given position in relation to a particular machine, and for given mounting and operating conditions, the emission sound pressure levels determined by the method of this International Standard will in general be lower than the directly measured sound pressure levels for the same machine in the typical workroom where it is used. This is due to reverberation and the contributions of other machines. A method of calculating the sound pressure levels in the vicinity of a machine operating alone in a workroom is given in ISO 11690-3. Commonly observed differences are 1 dB to 5 dB, but in extreme cases the difference may be even greater.

1.2 Types of noise and noise sources

This International Standard is, in principle, applicable to moving or stationary machines, for indoor or outdoor use, particularly those machines which are mass-produced. The methods given in this International Standard are not applicable to highly directional sound sources used outdoors.

This International Standard is particularly applicable to machines whose largest dimension is less than or equal to 1 m. It is also applicable to larger machines in certain cases (see 6.2.3).

This International Standard is applicable to all types of noise as defined in ISO 2204 and ISO 12001 for which methods for determining the sound power level are available.

1.3 Test environment

The test environment to be used is that which is specified for the determination of the sound power level in accordance with the International Standards of the ISO 3740 or ISO 9614 series.

1.4 Specified positions

This International Standard is applicable to work stations and other specified positions in the vicinity of the source under test where emission sound pressure levels are to be determined. It is not applicable to work stations and other defined positions which are situated inside a cab or a cabin, or behind a screen.

A work station can be a single point, corresponding to the specified position of a standing or seated operator. It can also be a specified path.

NOTE 3 More detailed specifications regarding seated, standing, stationary or moving operators, as well as information concerning bystanders, are to be found in ISO 11201.

1.5 Specific field of application of each method

Specific information on the field of application of each of the two methods described in this International Standard is given in 6.2.2 and 6.2.3.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2204:1979, *Acoustics — Guide to International Standards on the measurement of airborne acoustical noise and evaluation of its effects on human beings.*

ISO 3741:1988, *Acoustics — Determination of sound power levels of noise sources — Precision methods for broad-band sources in reverberation rooms.*

ISO 3742:1988, *Acoustics — Determination of sound power levels of noise sources — Precision methods for discrete-frequency and narrow-band sources in reverberation rooms.*

ISO 3743-1:1994, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, movable sources in reverberant fields — Part 1: Comparison method for hard-walled test rooms.*

ISO 3743-2:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, movable sources in reverberant fields — Part 2: Methods for special reverberation test rooms.*

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane.*

ISO 3745:1977, *Acoustics — Determination of sound power levels of noise sources — Precision methods for anechoic and semi-anechoic rooms.*

ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane.*

ISO 9614-1:1993, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points.*

ISO 9614-2:—[1], *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning.*

ISO 11200:1995, *Acoustics — Noise emitted by machinery and equipment — Guidelines for the use of basic standards for the determination of emission sound pressure levels at a work station and at other specified positions.*

ISO 12001:—[1], *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code.*

IEC 651:1979, *Sound level meters.*

IEC 804:1985, *Integrating averaging sound level meters.*

IEC 942:1988, *Sound calibrators.*

IEC 1260:—[2], *Electroacoustics — Octave-band and fractional-octave-band filters.*

3 Definitions

For the purposes of this International Standard, the following definitions apply. More detailed definitions may be found in noise test codes for specific types of machinery and equipment.

3.1 emission: Airborne sound radiated by a well-defined noise source (e.g. the machine under test).

NOTE 4 Noise emission descriptors may be incorporated in a product label and/or product specification. The basic

1) To be published.

2) To be published. (Revision of IEC 225:1966)